



Janet Napolitano, Governor
Stephen A. Owens, ADEQ Director

DIRECTORS REPORT 2004

A Message from the Director...

Fiscal year 2004 was a year of continued progress for the Arizona Department of Environmental Quality. The department implemented several successful initiatives and enhanced its focus on the central functions of its mission. The department also underwent a very successful performance audit by the Auditor General's office that recommended continuation of the department.

Among the department's top priorities in FY 2004, the Children's Environmental Health Project has been met with an enthusiastic response from parents, educators, school officials, children's health experts, community leaders and others throughout the state. In April 2004, the department sponsored its second forum on children's environmental health, this time in Tucson focusing on the environmental health factors facing children in southern Arizona.

The department continued its outreach and assistance efforts, including particularly outreach and assistance to small water systems across the state that must meet the new federal arsenic standard, which takes effect in January 2006.

To better utilize resources and increase deterrence, the department continued to focus its enforcement activities on offenders with a history of noncompliance or who commit major violations of the law. In so doing, the department also has improved its enforcement and compliance efforts.

Throughout FY 2004, the department also continued to move forward with its effort to improve the administration of the State Assurance Fund (SAF), which assists eligible underground storage tank owners, operators and others in meeting the potentially high costs of leaking UST investigations and cleanups. As we eliminated a backlog of more than 1,100 unpaid SAF applications that had accumulated under previous administrations, the department conducted an important stakeholder process on the SAF and worked closely with the legislature as it enacted substantial reforms of the program.

More detailed information about our department's activities in FY 2004 may be found in the appendices to this report and on the department's Web site at www.azdeq.gov.

Like other state agencies, ADEQ continued to grapple with challenges presented by the state's revenue shortfall during FY 2004. After suffering a 39 percent reduction in its General Fund appropriation in previous years, the department's appropriation was not increased for FY 2004. Because of funding shortfalls, the department operated during FY 2004 with a large number of its authorized positions vacant.

Despite such challenges, fiscal year 2004 was an exciting and productive year for ADEQ, and this report shows the great contribution the department's employees make to public health and the environment. I am honored to be associated with men and women so dedicated to professionalism and public service.

Stephen A. Owens
Director

ADEQ at a Glance...

The Arizona Legislature established ADEQ as the state's environmental regulatory agency under the Environmental Quality Act of 1986. ADEQ's mission is to protect and enhance public health and the environment in Arizona. The department achieves this mission by administering our state's environmental laws and delegated federal programs to prevent pollution of our air, water and land, and to clean up such pollution when it occurs.



During FY 2004, ADEQ had an average of 705 employees working in our Phoenix facilities and our Flagstaff and Tucson regional offices. The department's organizational structure is composed of four programmatic divisions that fulfill our environmental protection mission in the areas of air quality, water quality, waste programs and tank programs. Those divisions are supported by the director's office and an administrative services division.

Our agency's core functions are vital to public health and safety, and by carrying them out, ADEQ employees ensure that Arizona's environmental quality is protected and that citizens enjoy an excellent quality of life. The core functions align with the agency mission, strategic plan and performance objectives, which are summarized below.

Pollution Control

Planning – ADEQ's planning specialists develop management practices and control strategies in areas where health-based environmental standards are threatened or violated. Arizona's air quality management areas and watershed planning efforts are examples of this activity.

Permitting – ADEQ issues permits, approvals and certifications to ensure that facilities are constructed and operated in accordance with the law and that any discharges to the air, water and soil are within healthful standards established by law.

Pollution Prevention – As an alternative to regulatory enforcement, ADEQ offers guidance, assistance and financial incentives to encourage businesses to minimize waste and resulting pollution.

Environmental Clean Up

Remediation – ADEQ investigates and oversees the removal and cleanup of contaminated soil and groundwater to protect public health and the environment.

Emergency Response – ADEQ provides technical support and assistance to emergency response agencies to help them minimize the impacts to public health and the environment in the areas of air quality, water quality and hazardous waste.

Compliance Management

Compliance Assistance – ADEQ works with businesses and other regulated entities to help them understand and comply with environmental regulatory requirements and promote positive environmental practices.

Inspections – ADEQ inspects facilities on a regular basis and in response to citizen complaints to ensure compliance with environmental laws.

Enforcement – ADEQ ensures compliance with environmental laws by pursuing informal enforcement through notices of opportunity to correct or notices of violation and formal enforcement through administrative orders and judicial enforcement actions in conjunction with the Arizona Attorney General's Office.

Monitoring and Assessment

Monitoring – ADEQ's monitoring personnel collect air, water and soil samples for laboratory analyses to determine the presence or absence of contaminants.

Assessment – ADEQ's assessment staff interpret the data that result from field research to draw conclusions about environmental indicators and trends and form the basis for future planning and policy decisions.

Public Outreach

Education and Outreach – ADEQ offers seminars, workshops, presentations and publishes information via newsletters and the Internet to inform the public about department programs and activities. ADEQ also supports numerous advisory and stakeholder groups and conducts public hearings and meetings in support of our regulatory and public policy functions.



Financial Assistance – ADEQ offers financial assistance for leaking underground storage tank cleanup costs and provides grants to local governments for air quality and water quality programs. Other ADEQ programs also make funding available to eligible applicants for recycling, water quality and pollution prevention projects and activities.

Public Policy

Policy Development – ADEQ works with state and national organizations and stakeholders to shape and influence environmental policy at the state and federal levels. Policies are developed to explain how we interpret statutes and rules to ensure consistent, equitable decisions and to inform the public about how we do business.

Rule Development – ADEQ writes rules, based on science and public policy, to implement the broad statutory language contained in legislation.

Administrative Services

In addition to these programmatic responsibilities, ADEQ has an administrative services division that provides centralized support for many of the agency's business activities including accounting, budgeting, strategic planning, contracts and procurement, human resources, general and laboratory services and maintaining our information technology systems.

Legislative Highlights

In the 2004 legislative session, ADEQ closely monitored 24 bills which became law and helped advance ADEQ's public health and environmental protection mission.

Among others, the legislature extended programs that assist businesses and municipalities in complying with safe drinking water requirements ([H.B. 2421](#), [S.B. 1006](#) and [S.B. 1062](#)), keep landfills safe ([S.B. 1085](#)) and modify existing Water Quality Assurance Revolving Fund (WQARF) regulations to remediate contaminated property ([H.B. 2484](#)). In addition the legislature funded the WQARF program with a \$10 million Corporate Income Tax transfer.

The legislature also passed laws that dealt with land redevelopment and innovation ([H.B. 2088](#) and [H.B. 2279](#)) and helping agriculture and small truckers to follow environmental guidelines while sustaining good business practices ([H.B. 2419](#) and [S.B. 1246](#)). [H.B. 2651](#) broadened access to ADEQ's Municipal Tank Closure program to provide funding to unincorporated areas to remove old underground storage tanks from the ground. [S.B. 1306](#) phases out funding for leaking underground storage tank investigations and cleanups over several years while instituting other reforms to control costs and protect the environment.

ADEQ continued to protect the air quality and visibility in and around natural areas such as the Grand Canyon by amending and clarifying Arizona's regional haze reduction laws ([S.B. 1064](#)).

Finally, the second regular session of the 46th Legislature continued to present budgetary challenges for ADEQ. After contributing roughly \$17 million from its fund balances toward balancing the state's FY 2004 budget, the department contributed approximately \$15 million toward balancing the FY 2005 budget. Moreover, while ADEQ obtained \$10 million for WQARF for FY 2005, this amount is still \$5 million below the committed level of funding, furthering the cumulative adverse effect of annual funding shortfalls in the WQARF program.

FY 2004 Accomplishments...

Pollution Control – Planning

Continued Progress toward Cleaner Air

In FY 2004, ADEQ continued to lead Arizona's progress to reduce air pollution and improve visibility throughout the state.

In September 2003, EPA issued a finding that the Phoenix metropolitan non-attainment area met a Dec. 31, 2000, deadline to comply with federal standards for carbon monoxide, one of several common air pollutants regulated by the federal government. The action moved the Phoenix metropolitan area a step closer to qualifying for designation as an attainment area for carbon monoxide. The Phoenix area has met federal air quality standards for carbon monoxide since 1996.



Throughout FY 2004, ADEQ worked constructively with stakeholders and the U.S. Environmental Protection Agency (EPA) to designate the boundaries for the Phoenix area eight hour ground-level ozone nonattainment area. As a result of the department's efforts, in April 2004, EPA designated the new nonattainment area as encompassing the northeastern portion of Maricopa County and a very small portion of northeastern Pinal County. The department's effective involvement avoided imposition of EPA's presumptive boundary, which would have placed the entirety of both Maricopa County and Pinal County in the new non-attainment area.

In October 2003, ADEQ released the first in a series of plans known collectively as the Regional Haze State Implementation Plan, which will restore visibility in national parks and wilderness areas in Arizona to natural conditions by 2064. The plans seek to manage and reduce visibility impairment produced by fine particles from a variety of sources that absorb or scatter light across a broad geographic area.

In June 2004, the EPA announced its determination that Arizona had been designated as compliant with National Ambient Air Quality Standards for particulate matter less than 2.5 microns in size, referred to as PM_{2.5}. The decision applied to all Arizona cities and counties, excluding tribal lands.

Pollution Control – Permitting

New General Permits for the AZPDES Program

In FY 2004, ADEQ created two new general permits for the Arizona Pollutant Discharge Elimination System (AZPDES) program: the Concentrated Animal Feeding Operations (CAFO) general permit, which regulates discharges to surface waters from large dairies, cattle feedlots, poultry and swine operations, and provides for regulation of manure and other animal waste through Nutrient Management Plans; and the *de minimus* general permit for low risk/low volume discharges from activities such as potable water line and fire hydrant flushing.

Pollution Control – Pollution Prevention

Expanding Arizona Fuel Options while Preventing Pollution

In January 2004, the EPA approved ADEQ's request to eliminate the requirement that fuel used in the Phoenix area during the summer contain oxygenates like MTBE. Seasonal elimination of the oxygen content requirement has expanded the range of options for refiners to make Arizona CBG and helped to remove MTBE as a threat to area groundwater and drinking water sources without compromising the public health and environmental benefits that have resulted from the state's Cleaner Burning Gasoline (CBG) program. ADEQ also supported passage of H.B. 2142, which banned MTBE in fuels used in Arizona.



ADEQ Promotes Recycling with Arizona Little Leagues

In March 2004, ADEQ began a pilot project with Little Leagues throughout Arizona to promote recycling at Little League baseball games across the state. Through the project, banners supporting ADEQ's recycling program were hung on backstops and outfield fences to promote recycling during their games. ADEQ also provided recycling containers for plastic bottles and aluminum cans at ball fields.

ADEQ Teams with StRUT to Recycle Computer Equipment and Mobile Phones

In April 2004, for the fifth consecutive year, ADEQ teamed with the non-profit Students Recycling Used Technology (StRUT) Program to collect and recycle used computers at several Valley locations. Recycling centers were set up throughout the Valley to give

individuals and organizations a convenient way to dispose of obsolete computers, computer parts and mobile phones in a way that benefits schools and non-profit organizations throughout Arizona. Through the StRUT Program, students acquire new skills by refurbishing the donated equipment and then in turn donating the refurbished items to local schools and non-profit organizations.

Environmental Clean Up – Remediation

ADEQ Adds Two Sites to State Superfund List

In June 2004, ADEQ made the first additions in five years to the list of sites that receive state funding to assess and clean up contaminated soil and groundwater. Listing on the Water Quality Assurance Revolving Fund (WQARF) registry is the first step in a detailed process to fully assess the nature and extent of contamination, determine an appropriate cleanup strategy and seek recovery of remediation costs from the parties responsible for the contamination.

The two sites added are:

56th Street and Earl Drive (east Phoenix): The site is a 14-acre tract of land where a Motorola industrial plant was located from 1950 to the early 1980s. The plant had been used for electronics assembly at various times throughout its history, during which time various chemical solvents and metals were disposed of improperly in the area. Motorola officials had been voluntarily remediating the site, but addition of the area to the registry ensures proper state oversight.

Cooper Road and Commerce Avenue (Gilbert): The soil and groundwater at this former Unichem industrial facility site located near Cooper Road and Commerce Avenue in Gilbert is contaminated with perchloroethylene (PCE), a solvent with a wide range of industrial applications. An initial remedial investigation by ADEQ staff will clarify the boundaries of the contaminated groundwater plume and identify best practices for remediation of the site. ADEQ also is working to identify parties responsible for the contamination.

The additions brought the total number of sites on the [WQARF registry](#) to 35 by the close of the fiscal year. A third addition to the WQARF registry occurred in August 2004.

Early Response Actions

ADEQ's WQARF program places a high priority on early response actions where human health is potentially threatened, where sources of contamination can cause significant environmental impact, or where early actions can save significant WQARF funds by limiting the spread of contamination. Early response actions are remedial actions initiated

before the selection of a final remedy and may include relatively simple short-term actions, such as fencing or providing bottled water, or they may involve more complex actions such as a large-scale groundwater treatment system.

In FY 2004, the WQARF program initiated three significant early response actions, while operation and maintenance continued at eight locations where early response actions had been initiated in prior years.

Phoenix 32nd Street and Indian School Road WQARF Site – In April 2004, ADEQ constructed an early response action to remove the source of contamination at a former dry cleaner located on the southeast corner of 32nd Street and Indian School Road in Phoenix. Soil contaminated with PCE was present beneath an existing building which resulted in PCE vapors in the building. PCE is also a continuing source of contamination to groundwater. ADEQ constructed an air sparge and soil vapor extraction (SVE) system to remove groundwater and soil contamination.

Phoenix 40th Street and Indian School Road WQARF Site – Also in April 2004, ADEQ constructed an early response action to remove the source of contamination at a former dry cleaner facility located on the northeast corner of 40th St. and Indian School Road in Phoenix. Soil contaminated with PCE is present in soil and represents a continuing source of contamination in groundwater. ADEQ constructed an air sparge and SVE system to remove groundwater and soil contamination.

South Mesa WQARF Site – In June 2004, ADEQ constructed an early response action to remove the source of contamination at a former facility located at 1545 North McQueen Road in Gilbert. Soil contaminated with PCE is present beneath the existing office building which resulted in PCE vapors migrating into the building. PCE is also as a continuing source of contamination to the groundwater. ADEQ constructed an SVE system to remove subsurface soil contamination.

Voluntary Remediation Program

In FY 2004, ADEQ's Voluntary Remediation Program (VRP) continued encouraging property owners, prospective purchasers and other interested parties to investigate and clean up contaminated sites in cooperation with the agency. There are currently 79 active and 81 closed sites in the VRP, with remediation of 568,213 tons of soil at participating sites. The number of applicants to the VRP continued to grow as well, with 18 new sites containing soil and groundwater contamination accepted into the program in 2004.

ADEQ continues to educate consultants and potential applicants about the benefits of the program, which include reducing the public's exposure to contaminants and ensuring that cleanups meet applicable requirements. In exchange for their initiative and cooperation, program participants benefit from ADEQ's expedited review of the clean up and upon successful completion, a closure document that is accepted by all relevant ADEQ programs. In addition, applicants can use the closure document to demonstrate to potential purchasers and lending institutions that all applicable cleanup standards have been achieved.

UPCO Perchlorate Contamination

In March 2004, ADEQ sampled residents' drinking water in the north Phoenix neighborhood bordering the Universal Propulsion Company (UPCO) after the company notified the department that perchlorate contamination had been found in the groundwater at the facility. In October 2004, ADEQ entered into a Consent Order with UPCO requiring them to clean up contaminated soil and groundwater at the facility and cease open burning of hazardous materials.

Emergency Response

ADEQ Helps Launch Valley-wide Community Emergency Notification System

In November 2003, ADEQ joined the Maricopa Association of Governments to launch a rapid computerized telephone dialing system to notify Maricopa County residents in emergencies. The Community Emergency Notification System, or CENS, uses the 911 database to contact residents, in English and Spanish, when an emergency occurs and what actions they should take. The \$2.5 million system was funded as part of the 2001 record \$22 million settlement with TRW Vehicle Safety Systems – the largest settlement in U.S. history for hazardous waste violations – that ADEQ investigated and which the Arizona Attorney General successfully prosecuted on ADEQ's behalf.

Emergency Response Activity

During FY 2004, ADEQ's Emergency Response Unit fielded 175 reported incidents, 37 of which required deployment of the department's emergency response personnel. The following exemplify the types of response actions ADEQ undertook during the period:

- During an inspection of a hazardous waste transfer facility near Tucson in November 2003, ADEQ inspectors discovered several containers of hazardous waste that appeared to be in an unstable condition due to age and improper storage. Emergency response personnel were called in, determined the materials posed a significant public health threat and stabilized the materials so they could be removed safely. The facility operator was charged for violating state and federal environmental laws.
- Also in November 2003, ADEQ emergency personnel responded to Glendale Fire Department's request for assistance with a chlorine gas release from a 90-ton railcar involved in a cross-loading operation. ADEQ provided on-site technical assistance to the local incident command and served the role of state on-scene coordinator for the additional state resources deployed during the response action.
- In June 2004, ADEQ responded to a request from Nogales, Ariz., to treat and remove residual contaminants resulting from a 30 million gallon raw sewage release into Nogales Wash south of the U.S.-Mexico border. ADEQ's emergency responders oversaw the removal of more than 200 tons of debris and the deployment of several hundred pounds of chlorine that was used to treat the sewage that remained in the wash.

ADEQ emergency responders also participated in several training exercises in FY 2004, including the Arizona-Sonora Bi-national Full-Scale Terrorism Response Exercise and the annual Palo Verde Nuclear Generating Station Drill.

Wildfire Operations

As FY 2004 began, ADEQ personnel were providing support to local, state and federal officials battling the Aspen fire on Mount Lemmon in Pima County. Department staff provided air quality monitoring and weather forecasts information during the fire to protect the health of communities affected by smoke from the fire and surveyed area drinking water systems to speed the return of residents to their homes and property once the fire was extinguished. ADEQ also waived solid waste rules to allow private property owners to bury burned trees and vegetation that would normally require landfill disposal.



During the summer of 2004, ADEQ similarly provided air quality monitoring to communities near the Willow fire in Gila County and the Nuttall Complex fire in Graham County. Air quality monitoring equipment was setup in the vicinity and results were communicated to local media and residents on a regular basis.

Compliance Management – Compliance Assistance

ADEQ Pollution Prevention Program Reduces Compliance Costs

ADEQ's Pollution Prevention, or P2, program works with Arizona businesses to reduce toxic substances at the source, minimize the generation of hazardous waste and prevent the release of pollutants to the environment.

The program requires all industrial facilities within a certain threshold of hazardous waste generation and toxic substance use to perform a P2 analysis and to file an annual P2 plan. The success of Arizona's P2 program is due in part to a growing awareness among the regulated community of the benefits that come from participating in the program. ADEQ provides a 50 percent reduction in hazardous waste generation fees when a company has an approved P2 plan in place. Since inception, the program has, on average, saved more than \$260,000 for filers.

ADEQ Eliminates Backlog of State Assurance Fund Claims

In FY 2004, ADEQ completed the effort it began in January 2003 to improve the administration of the State Assurance Fund (SAF), which assists eligible underground storage tank owners, operators and others in meeting the potentially high costs of leaking UST investigations and cleanups. As a result of this work, ADEQ eliminated the backlog of more than 1,100 unpaid SAF applications that had accumulated over previous years. SAF applicants no longer must wait years for payment because the SAF now operates on a cash basis so that applicants are paid as soon as their applications are processed and approved.

Compliance Management – Inspections and Enforcement

During FY 2004, ADEQ continued its efforts to improve the consistency, fairness and timeliness of the department's compliance and enforcement activities. Since January 2003, ADEQ has worked to move away from a “one size fits all” approach to compliance and enforcement to focus resources on major violations and repeat offenders. As a result, the department has been better able to address those facilities that require increased scrutiny and maximize resources devoted to prosecuting serious violations.



The following are some of ADEQ's more significant enforcement efforts during FY 2004:

Black Mesa Pipeline

In August 2003, ADEQ and the EPA fined Black Mesa Pipeline, Inc., \$55,000 in penalties associated with discharges from its northern Arizona coal slurry pipeline that occurred Dec. 31, 2002 and March 24, 2003 under the terms of the Consent Decree signed by Black Mesa, ADEQ and the EPA in 2001.

Dome Rock Industries

In September 2003, Quartzsite-based Dome Rock Industries Inc. paid a \$100,000 penalty for a series of hazardous waste violations that occurred in 2000. Dome Rock owns and operates a facility that collects, handles and processes wastes. On two separate occasions, Dome Rock accepted loads of hazardous waste without a permit and then shipped the hazardous waste to another unpermitted facility where the waste was illegally burned. On each occasion, Dome Rock also failed to comply with various reporting and tracking requirements. On another occasion, the company unlawfully stored hazardous waste at its facility.

Estes Landfill

In September 2003, ADEQ reached Superfund settlements totaling nearly \$1.7 million with five businesses to resolve their liability for releases of hazardous substances at the Estes Landfill in Phoenix. Under terms of the consent agreements, Frazee Industries, Inc.; GAC, Inc. (formerly known as Goettl Air Conditioning, Inc.); Honeywell International, Inc.; Safety-Kleen Systems, Inc.; and Waste Management of Arizona, Inc. will pay a combined total of \$1,673,000 to help pay the costs of cleaning up the site. The settlement amounts are based on each of the company's proportionate share of the projected cleanup costs under the WQARF program.

Kinder Morgan Energy Partners

ADEQ is pursuing enforcement action against Kinder Morgan Energy Partners in connection with the July 30, 2003, rupture of its East Line between Tucson and Phoenix that saturated five homes in a Tucson subdivision with gasoline and severely contaminated soil and groundwater at the site. Though initial estimates placed the fuel release at 10,000 gallons, to date Kinder Morgan has removed more than 50,000 gallons of gasoline from the contaminated soil and groundwater, with substantial volume remaining.

La Osa Ranch

In December 2003, ADEQ issued a notice of violation to Johnson International, Inc., developer of La Osa Ranch near Marana, for violating storm water regulations violations. ADEQ cited Johnson with discharging pollutants from its ground-clearing activities into Los Robles Wash and other unnamed tributaries of the Santa Cruz River and failing to notify officials before clearing the land. ADEQ's enforcement action is ongoing.

Gold Canyon Sewer Company

In late 2003, ADEQ fined Gold Canyon Sewer Company \$17,000 for illegally discharging wastewater into a wash adjacent to its wastewater treatment facility in northeastern Pinal County.

APS Cholla Power Plant

In January 2004 Arizona Public Service Company paid \$200,000 for air and hazardous waste violations at the APS Cholla Power Plant near Joseph City. The facility failed to properly characterize, label, store and dispose of hazardous waste. The facility also had violated its air quality permit and air quality regulations by burning paint, paint chips and antifreeze as liquid waste in one of its boilers, and dismantling and burning asbestos transite panels during fire training exercises.

Speedy's Truck Stop

In March 2004, ADEQ cited Speedy's Truck Stop Inc., in Lupton, for seven violations of Arizona's laws governing the safe disposal of solid and hazardous waste. The violations resulted from an inspection, which ADEQ conducted at the request of and in conjunction with the Navajo Nation Environmental Protection Agency. The inspection discovered undocumented 55-gallon drums overflowing contaminated liquids onto the ground, chemicals spilling directly from leaking pipes onto the ground, piles of uncovered gasoline-contaminated soil and waste sludge being dumped on adjacent property. ADEQ is involved in an ongoing joint enforcement action with the U.S EPA and the Navajo Nation EPA.

Asbestos Removal Near Yuma

In April 2004, ADEQ removed more than 1,000 bags of asbestos-containing material that had been illegally dumped at a site southwest of Yuma. The removed waste was transported to Copper Mountain Landfill in Wellton, which is permitted and equipped to store asbestos. In September 2004, the department issued notices of violation to three companies and two individuals for their roles in the illegal disposal.



ADEQ Begins Year-Round Air Quality Forecasting

In September 2003, as part of an effort to provide more comprehensive information about air quality in the Phoenix metropolitan area, ADEQ began providing year-round air quality forecasts via its Web site and telephone information line. The daily forecast includes information about ground-level ozone pollution and carbon monoxide as well as coarse and fine particulate matter or dust, measured as PM₁₀ and PM_{2.5}. The forecasts are available on [ADEQ's Web site](#).



ADEQ Launches Visibility Index Web Site

In December 2003, ADEQ launched its Visibility Index Web site, which provides near real-time images and air quality data on visibility conditions from five different locations in the Phoenix metropolitan area. The cameras and data instruments provide the first “clear” picture of Phoenix air quality.

The Web site serves as a public education tool designed to provide residents with accurate information about current visibility in and around Phoenix as well as information about the factors that influence visibility such as air pollution and weather conditions. The site offers photographs and air quality data measured between Phoenix and South Mountain, the Estrella Mountains, the White Tank Mountains, Camelback Mountain and the Superstitions. The data and photos are refreshed every 15 minutes.

Visibility is a good indicator of pollution levels, particularly during the winter months when frequent temperature inversions trap fine particles, creating the Valley's familiar "brown cloud." Emissions from a wide range of sources such as power generating stations, automobiles, trucks and other diesel-powered equipment contribute to the problem by scattering and absorbing light passing through the atmosphere.

The Web site is found at www.phoenixvis.net 🌐.

ADEQ Begins Air Pollution Forecasting Program for Yuma County

In January 2004, as part of its efforts to provide increased information to citizens and reduce public exposure to unhealthy levels of blowing dust, ADEQ began issuing daily wind forecasts for Yuma County.

The forecasts, [available online](#) at the ADEQ Web site, are updated each day to provide Yuma County residents with advance notice of weather conditions likely to cause elevated

levels of windblown dust and dirt. They are one component of a plan designed to help Yuma County achieve compliance with federal air quality standards for airborne particulate matter, especially particles 10 micrometers and less in size (often referred to as PM₁₀), which can exacerbate respiratory problems for children, senior citizens and those with respiratory illnesses such as asthma or chronic bronchitis.

Testing Helping to Determine Nogales International Wastewater Treatment Plant Needs

In February 2004, ADEQ began testing to determine characteristics of wastewater flowing north through nine-mile pipeline from Nogales, Sonora. In coordination with local, federal and international agencies, ADEQ installed sampling and testing equipment in the line to monitor the wastewater for acidity, temperature, salinity, corrosion potential and dissolved oxygen, as well as to determine the organic strength of the wastewater and levels of nitrogen and trace contaminants including metals. The testing has provided information about flow rates and helped identify possible sources of non-municipal wastewater entering the pipeline – information that is needed to finalize the design and construction of a new international wastewater treatment plant in Nogales, Sonora.

ADEQ Partners With GateWay Community College to Train Volunteers of a Water Quality Monitoring Program

In September 2003, ADEQ joined with GateWay Community College in Phoenix to offer a course on water quality sampling for volunteer groups that support the agency's watershed monitoring program. The course taught volunteers how to use water quality monitoring equipment, develop a sampling plan, collect samples and compile data. The data collected by volunteers is used to establish baseline conditions or trends for water that would otherwise go unmonitored, evaluate the success of best management practices designed to mitigate problems, to develop further research or restoration efforts and alert state officials of potential problems.

Fish Consumption Advisories

In July 2003, ADEQ issued a fish consumption advisory for fish caught from Soldier, Soldier Annex and Long lakes located in the Coconino National Forest, 35 miles southeast of Flagstaff in Coconino County. The advisory recommended that fish from these lakes not be eaten and resulted from the discovery of mercury in fish caught from this system of three interconnected lakes. Over the past several years, ADEQ has found increasing evidence of mercury contamination in the lakes and streams throughout the state. As a result of this monitoring, ADEQ has issued mercury fish consumption advisories on 11 water bodies throughout the state.



Fish Kills Prompted Monitoring, Investigation at Salt River Reservoirs

In May 2004, ADEQ, the Arizona Game and Fish Department and the University of Arizona undertook combined monitoring efforts to assess and characterize the cause of recent fish kills that had occurred in Apache, Canyon and Saguaro Lakes. When the monitoring activities confirmed the presence of potentially toxic algae in the lakes, ADEQ issued public advisories warning swimmers and boaters to avoid contact with foamy water in the lakes.

Public Outreach – Education and Outreach

Meeting the New Federal Arsenic Standard

In FY 2004, ADEQ continued to provide extensive outreach about the new federal standard for arsenic in drinking water that goes into effect in January 2006, including educating water systems about ADEQ's Arsenic Master Plan. The plan includes chapters on the requirements of the new arsenic regulation; a technical decision matrix which allows a water system to find the most-effective, least-cost treatment technology for its specific mix of source water and system configuration; a compendium of financial assistance available, including contacts; a list of technical service providers equipped to consult on the complete range of issues related to the arsenic regulation; and finally, an online financial evaluation tool, which allows the water system to evaluate the adequacy of its existing rate structure. By consolidating the needs of nearly 300 small water systems into a single plan, ADEQ anticipates that those communities may save an estimated \$6 million in compliance costs.

ADEQ Awards \$1.2 Million for Arizona Recycling Projects

In August 2003, ADEQ awarded \$1.2 million in contracts to fund 13 recycling projects as part of the department's efforts to support and promote recycling in Arizona. ADEQ's [Recycling Program](#) awards funds to private enterprises, political subdivisions, and non-profit organizations for Waste Reduction Assistance (WRA), Recycling Research and Development (RR&D) and Waste Reduction Initiate through Education (WRITE) projects.



The WRA program provides funding assistance to promote recycling opportunities in communities. The RR&D program supports efforts to divert significant amounts of material from the solid waste stream in the future. The WRITE program supports education about and the promotion of recycling opportunities to increase awareness of properly reducing and disposing of solid waste.

Projects funded by ADEQ included local household hazardous waste collection programs, curbside recycling projects, Arizona State Parks collection program and expansion of material recovery facilities, development of a commercially viable process of converting bio mass to ethanol fuel, and numerous community education and outreach programs.

ADEQ Sponsors "Make a Splash" Water Quality Festivals for Arizona Students

In September 2003, ADEQ sponsored festivals in Surprise and Safford with more than 1,500 fourth-grade students for the fourth annual "Make a Splash with Project WET" program. The festivals consisted of multiple learning stations where students actively engaged in hands-on water activities and investigations. Local water quality and water resource experts served as instructors at the water festival stations, creating bridges between teachers, students and local experts that often generate follow-up interest and educational activities.

Established in 1984, Project WET (Water Education for Teachers) is an international water science and education program dedicated to teaching children around the world about water stewardship and conservation.

Verde Valley River Days Festival

ADEQ personnel also participated in the 15th Annual Verde River Days Festival in Cottonwood, Ariz., on Sept. 27, 2003, at the Dead Horse Ranch State Park. This festival, which promotes understanding and appreciation of the Verde River, featured interactive ADEQ displays and exhibits designed to teach adults and children about the department's mission to improve the quality of Arizona's air, land and water resources. In addition to learning about watersheds and groundwater flow through ADEQ's hands-on exhibit, visitors learned about non-point source pollution, air quality, underground storage tanks, proper waste disposal and recycling.



ADEQ Launches Redesigned Web Site

In January 2004, ADEQ launched a redesigned Web site (www.azdeq.gov) as part of its ongoing effort to improve the way the department provides information about its programs and services. The site, designed to be "user friendly," enhances the public's ability to obtain information about ADEQ's programs and activities, as well as permits, regulations, sites and regulated operations throughout the state.

ADEQ Awards \$1.4 Million in Water Quality Improvement Grants

In January 2004, ADEQ awarded \$1.4 million in grants to help improve the state's water quality and mitigate non-point source watershed pollution throughout the state. A total of 15 different grants were awarded to approved projects in Apache, Cochise, Coconino, Gila, Graham, Greenlee, Navajo, Santa Cruz and Yavapai counties as part of ADEQ's [Water Quality Improvement Grant Program](#).



Non-point source pollution remains a top priority for ADEQ in its efforts to protect public health and the environment in Arizona. A significant threat to water quality in Arizona, non-point source pollution is caused by pollutants that are carried into lakes, streams or groundwater resources through natural runoff.

The grants are funded through the U.S. EPA under the Clean Water Act.

Municipal Tank Closure Program Expanded

During the 2004 regular legislative session, ADEQ supported H.B. 2651, which expanded the [Municipal Tank Closure Fund](#) Program to include abandoned underground storage tank cleanup sites in unincorporated areas. Eligibility in the three-year-old program was previously limited to clean-up sites in incorporated communities of 15,000 or fewer people.

The ADEQ Municipal Tank Closure Program can remove and clean up affected sites at no cost to the property owner or the community and can also reimburse municipalities for application costs. Removing abandoned underground storage tanks helps put properties back into productive economic use in these communities, in addition to protecting the environment.

Toxic Reduction Plan Selected in South Phoenix

In December 2003, a community advisory council selected the area between 25th Avenue and 24th Street, south from the main railroad lines to Broadway as the target area for ADEQ's toxics reduction pilot project in South Phoenix. The goal of the pilot project is to identify sources of toxic pollutants in the community and develop strategies to reduce them.

Public Policy – Policy Development

Children's Environmental Health

In October 2003, ADEQ joined with the University of Arizona to implement an integrated pest management program in several Arizona schools to reduce school children's exposure to harmful pesticides. Integrated pest management uses a combination of mechanical and biological methods to minimize the need for chemical pesticides to manage insects and other pests safely.



In January 2004, ADEQ released its [Action Plan to Improve Children's Environmental Health in Arizona](#). The plan outlined the department's efforts over the year to address environmental risks to the health of children in Arizona, including environmental triggers of childhood asthma, children's exposure to idling school bus exhaust, pesticides use in schools, air quality along the U.S.-Mexico border and other concerns.

The action plan also drew upon recommendations ADEQ received at the state's first Children's Environmental Health Forum held in May 2003 at the State Capitol. Building on the success of the first forum, ADEQ hosted a second forum in April 2004 in Tucson that addressed environmental health challenges to children living in southern Arizona, particularly along the Arizona-Sonora border.

Throughout early 2004, ADEQ worked with several Arizona school districts to develop an innovative pilot program to reduce children's exposure to harmful diesel emissions from buses idling near schools. Key elements of the pilot program, which was formally launched in August 2004, include having drivers turn off buses upon arrival at a school and not restart the engine until the bus is ready to depart. Diesel emissions can aggravate respiratory illnesses, such as asthma, and have been linked to lung and heart disease. One of the components of diesel emissions, carbon monoxide, also can reduce alertness and learning capacity in children.

ADEQ Assumes Leadership of the Western Regional Air Partnership

In October 2003, Governor Janet Napolitano became the state co-chair of the Western Regional Air Partnership (WRAP). With Governor Napolitano as co-chair, ADEQ has assumed a leadership role in coordinating the ongoing efforts of the WRAP, a state, tribal and federal agency coalition that provides technical support and assistance to states and tribes on air quality and visibility initiatives in the Western United States.

The WRAP was created as the successor to the Grand Canyon Visibility Transport Commission. It is administered jointly by the Western Governors' Association and the National Tribal Environmental Council and provides technical assistance and policy guidance to member states and tribes to help them achieve regional air quality and visibility goals.

ADEQ Initiates Biosolids Management Program

In April 2004, the U.S. EPA granted ADEQ regulatory authority over biosolids management in Arizona. Biosolids are a byproduct of the wastewater treatment process and are treated separately to reduce potential pathogens. ADEQ's Biosolids Management Program administers requirements for wastewater treatment plants, composters, land appliers and operators of biosolids disposal sites. ADEQ also is responsible for issuing permits, enforcing standards and providing guidance to those involved in the production or disposal of sewage sludge.

EPA retained biosolids management regulatory authority on tribal lands within Arizona.

ADEQ Addresses Perchlorate Contamination in Arizona

In May 2004, ADEQ joined with the Arizona Department of Health Services, the Arizona Department of Water Resources and the Arizona Department of Agriculture to form an interagency task force to assess the extent of [perchlorate contamination](#) in Arizona and develop strategies for reducing the risk of perchlorate contamination.



Perchlorate is a man-made inorganic salt that has been used since the late 1940s as a component in solid rocket fuel, munitions and pyrotechnics. Perchlorate contamination has been found in the Colorado River, at levels below Arizona's health-based guidance level of 14 parts per billion in water.

Perchlorate contamination also has been found at military and industrial site in Arizona, including military bases, aerospace installations and defense contractors involved in the production of propellants. Perchlorate is soluble and mobile in ground and surface water and degrades very slowly in the environment. When ingested, perchlorate can limit the uptake of iodide by the thyroid gland. Continual disruption of the thyroid gland can impede the ability of the gland to produce thyroid hormones that regulate metabolism and growth. Infants and pregnant women are particularly susceptible to the health effects that disruption of thyroid functions can cause.

ADEQ Works to Reduce Hexavalent Chromium Contamination

In FY 2004, ADEQ initiated a sector-based investigation of natural gas compressor stations along the four major natural gas pipelines within Arizona to determine the extent of groundwater pollution caused by historic use of [hexavalent chromium](#). A large natural gas transporter has agreed to join the Voluntary Remediation Program to clean up such historic contamination. Additionally, the department has taken a strong leadership role in ensuring the hexavalent chromium groundwater contamination in California at a Pacific Gas and Electric Company natural gas compressor station near Needles, Calif., does not contaminate the Colorado River or Arizona groundwater.

Hexavalent chromium, or chromium 6 as it is also known, is one of several common forms of chromium present in the environment. In air, chromium compounds are present mostly as fine dust particles which can eventually settle over land and water. Chromium can also attach to soil and eventually move deeper in the soil to groundwater. Exposure to chromium occurs from ingesting food, drinking water or breathing air contaminated with chromium. Breathing high levels of hexavalent chromium can cause irritation to the nose, such as runny nose, nosebleeds, and ulcers and holes in the nasal septum. Ingesting large amounts of hexavalent chromium can cause stomach pains and ulcers, convulsions, kidney and liver damage and death.

Conclusion...

Fiscal year 2004 was a time of continued progress for ADEQ, despite the ongoing challenges the department faced with reduced funding, staff and resources. The department concentrated on performing its core functions more efficiently and effectively, and, as the very successful audit by the Auditor General revealed, the department is doing its job well, even in the face of budgetary shortfalls.

The success of the department is due to the dedicated, talented and highly professional employees who work at ADEQ. Through their efforts, ADEQ will continue to protect public health and the environment for all of Arizona.

